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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,954	10/23/2003	Wolfgang Rein	9101.00004	6298

10534 7590 03/29/2005

BLISS MCGLYNN, P.C.
2075 WEST BIG BEAVER ROAD
SUITE 600
TROY, MI 48084

EXAMINER

GIMIE, MAHMOUD

ART UNIT	PAPER NUMBER
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3747

DATE MAILED: 03/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/691,954

Applicant(s)

REIN ET AL.

Examiner

Mahmoud Gimie

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 10-19 is/are rejected.
- 7) ☒ Claim(s) 2-9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 10, 12-14, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Schenkel (4, 987, 865).

Schenkel discloses a piston (10) adapted for reciprocal movement within a cylinder of an internal combustion engine, said piston comprising: a body having a crown (12) formed at the uppermost margins of said body and a skirt (14) depending from said crown and adapted for relative sliding motion with respect to the cylinder, said skirt including an outer circumference having a major thrust side and a minor thrust side formed substantially opposite each other on said outer circumference of said skirt (14); a coating (28) bonded to said skirt so as to be juxtaposed between said skirt (14) and the cylinder, said coating (28) having a plurality of recesses (26) formed thereon so as to define a predetermined pattern of recesses (saw tooth pattern, col. 2 and ll. 43) on the surface of said skirt, said plurality of recesses (26) including a series of lubrication grooves extending across said outer circumference of said piston skirt at a predetermined angle in a chevron formation (V formation), operatively engaging lubricant between said skirt and the cylinder wall.

With regard to claim 10, the coating is a polymer coating, col. 3 and ll. 7.

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With regard to claims 12 and 13, the ridges and valley are substantially hatch-like and the major and minor thrust sides are inherently and necessarily present in the invention.

With regard to claim 14, see above.

With regard to claims 16 and 17, for the property of lubrication retention, see col. 3 and II. 26-43, while thrust sides are inherently and necessarily present in the invention.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 18 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Wang et al (6,684,844).

Wang et al discloses a method of applying a predetermined pattern coating to a piston comprising the steps of: directing a silk screen having a predetermined pattern in proximate relation to the outer surface of the piston skirt; applying a coating to the outer surface of the piston skirt through the silk screen to impart a predetermined pattern, and curing the coating on the outer surface of the piston, see col. 5 and II. 10-23.

With regard to claim 19, the method further comprising the steps of: locating the one of the thrust sides of a piston; directing a silk screen having a predetermined pattern

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specific to a particular thrust side of a piston in proximate relation to the corresponding thrust side of the piston, applying the coating to the corresponding thrust side of the piston through the silk screen to impart a predetermined pattern; locating the opposing thrust side of a piston, directing a silk screen having a predetermined pattern specific to the opposing thrust side of a piston in proximate relation to the opposing thrust side of the piston, applying the coating the opposing thrust side of the piston through the silk screen to impart a predetermined pattern, curing the coatings applied to the piston skirt (22) corresponding to the major and minor thrust sides of the piston.

With regard to directing the silk screen to the major or minor thrust side, it is inherently and necessarily present in the method of coating.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 11 and 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schenkel (4,987,865).

Schenkel discloses all the limitations as applied to claims 1, 10,12,13,16 and 17 above except for replacing the polymer coating with a metallic coating.

At the time the invention was made; it would have been an obvious matter of design choice to a person of ordinary skill in the art to substitute polymer coating with metallic coating because applicant has not disclosed that doing so provides an advantage, is

used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, further, would have expected applicant's invention to perform equally well with polymer coating as disclosed by Schenkel because polymer coating decreases friction between the skirt portion of the piston and the cylinder wall, see col. 1 and ll. 21-23.

Allowable Subject Matter

7. Claims 2-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

8. Applicant's arguments filed 3/14/05 have been fully considered but they are not persuasive.

Applicant argues that the Schenkel patent neither discloses nor suggests a coating having a plurality of recesses **formed in the coating**. In addition, this patent neither discloses nor suggests that the plurality of recesses include a series of intersecting grooves extending across the outer circumference of the piston skirt at a predetermined angle. Finally, the Schenkel patent neither discloses nor suggests that the plurality of recesses collectively define a chevron formation, as required in independent claims.

Schenkel discloses coating (28) having a plurality of recesses (26) formed thereon so as to define a predetermined pattern of recesses (saw tooth pattern, col. 2 and ll. 43) on the surface of said skirt, said plurality of recesses (26) including a series of lubrication grooves extending across said outer circumference of said piston skirt at a

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predetermined angle in a chevron formation (V formation), operatively engaging lubricant between said skirt and the cylinder wall. With regard to claim 10, the coating is a polymer coating, col. 3 and 11. 7. Therefore, the arguments with reference to Schenkel are not persuasive.

With regard to Wang et al applicant argues that the Wang patent is silent as to the method of applying the predetermined coating to the piston. Accordingly, Wang et al. says nothing about directing a silk screen having a predetermined pattern in proximate relation to the outer surface of the piston skirt. This makes sense since Wang et al. does not appear to be concerned about the pattern of the coating applied to the piston. In addition, Wang et al. is also silent as to applying the coating to the outer surface of the piston skirt through the silk screen to impart a predetermined pattern to the coating as required in independent claim 18.

Wang et al discloses a method of applying a predetermined pattern coating to a piston comprising the steps of: directing a silk screen having a predetermined pattern in proximate relation to the outer surface of the piston skirt; applying a coating to the outer surface of the piston skirt through the silk screen to impart a predetermined pattern, and curing the coating on the outer surface of the piston, see column 5 and lines 10-23. In line 20 for instance, Wang et al recites the "CPC coating can be applied onto pistons via spray, **silk-screen printing** or pad printing process. Therefore, applicant's arguments are not persuasive.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mahmoud Gimie whose telephone number is 571-272-

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4841. The examiner can normally be reached on Tuesday-Friday between 7 a.m. -3:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Yuen can be reached on 571-272-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 3/25/05

MG

MAHMOUD GIMIE
PRIMARY EXAMINER